Biology 3201

June 2013 Public Exam Outcome Report

This examination follows the specifications, conventions and standards set out in the:

Biology 3201 Provincial Exam Standards

Units 1 - Maintaining Dynamic Equilibrium 3 - Genetic Continuity
2 - Reproduction and Development 4 - Evolution, Change and Diversity

PART I: Selected Response—Total Value: 75%

Item	Curriculum Guide Page	Outcome	Cognitive Level	Outcome Description
1	(Unit 1) 28	116-7	L1	Recognize the functions of the parts of the brain.
2	28	116-7	L1	Identify methods of protecting the nervous system.
3	28	116-7	L2	Given a diagram of the brain, identify a part of the brain.
4	30/32	317-1 317-2	L1	Recognize the events that occur in a reflex arc.
5	30	317-2	L1	Identify the parts/functions of a neuron.
6	30	317-1	L2	Demonstrate knowledge of the resting state of a neuron.
7	32	317-1	L2	Distinguish between an inhibitory and an excitatory response when given an unseen example.
8	36	115-5	L1	Identify how a technology works when exploring the human brain.
9	40	317-1	L1	Given a diagram of an eye, identify a specific part.
10	42	317-1	L2	Given a diagram of the ear, identify the parts and functions of each part.

11	34	317-4	L1	Recall the causes of a specific nervous system disorder.
12	48/50	317-4	L2	Identify the symptoms of a specific endocrine system disorder.
13	44	317-1	L1	Recognize the functions of the hormones released from the endocrine glands.
14	44/46/48	317-1 314-3 317-2	L2	Recognize the glands/hormones involved in regulating glucose levels in the blood.
15	50	317-4	L3	Given a set of symptoms, determine a possible diagnosis for a nervous system disorder.
16	(Unit 2) 60	313-2	L2	Given a diagram, identify the stages of mitosis.
17	58	313-2	L1	Recall the events that occur during the stages of mitosis/meiosis.
18	60	317-5	L1	Understand the process of radiation therapy and the effects on cancer cells.
19	62	313-3	L1	Recall the functions of the parts of a sperm cell.
20	62	116-3 213-7	L2	Understand the various types and processes of cloning.
21	64	313-3	L1	Make comparisons between a human egg and a human sperm.
22	64	116-7	L2	Provide an example of asexual reproduction.
23	68	313-2	L1	Identify where spermatogenesis occurs.
24	68	313-3	L2	Given a diagram, identify the parts/functions of the male reproduction system.
25	70	313-3	L1	Identify a reproductive organ given the features of that organ.
26	70	313-4	L3	Interpret trends in a graph of the female reproductive hormones that occur throughout the menstrual cycle.

27	70	313-3	L2	Given a diagram, identify the part of the female reproductive system where implantation occurs.
28	72	313-4	L2	Identify the cause/treatment of an identified sexually transmitted infection.
29	80	313-4	L1	Identify a teratogen, given an unseen example.
30	74	313-5 313-6	L2	Given symptoms, determine the cause of a couple's infertility.
31	78	313-4	L1	Recall the functions of the primary membranes.
32	76	118-4	L1	Given a characteristic about a birth control method, identify the method.
33	78	313-4	L2	Identify a specific stage of embryo development, given an unseen diagram.
34	78	313-4	L1	Describe how fraternal and identical twins are conceived.
35	80	313-4	L1	Recall the function of a given reproductive hormone.
36	(Unit 3) 86	315-3	L1	Recall the difference between the heterozygous and homozygous genotypes.
37	86	315-3	L1	Identify one of Mendel's Laws.
38	88	212-4	L2	Interpret patterns and trends in a dihybrid cross.
39	88	315-3	L2	Interpret a polygenic monohybrid cross involving blood groups.
40	90	214-5	L1	Interpret patterns and trends in a monohybrid cross that relates to co-dominance and incomplete dominance.
41	90	214-5	L1	Identify the genotypes of individuals that are involved in a test cross.
42	90	214-5	L2	Perform a monohybrid cross involving multiple alleles/blood types.

43	92	315-2	L1	Identify the contributions made by various scientists in the field of genetics.
44	94	315-1	L1	Identify an example of a polygenic trait.
45	94	2145	L2	Interpret patterns involving monohybrid crosses with sex-linked traits.
46	96,98	114-2 314-3	L2	Given the percentage of a nucleotide base, determine the percentage of the others. (Apply Chargaff's rule)
47	96/98/lab	314-3	L1	Identify the components of DNA.
48	98 lab	315-4	L2	Determine the number of codons in a given set of mRNA.
49	98 lab	315-4	L3	Determine the template strand of DNA given a protein and a codon table.
50	98 lab	315-5	L1	Recall the enzymes used in DNA replication.
51	98	315-4	L1	Describe the events that occur in the process of transcription.
52	100	115-3	L1	Recall a specific type of mutation.
53	96	115-3	L1	Identify the contributions made by various scientists in the field of genetics.
54	102	315-6	L1	Recall the types of chromosome mutations.
55	100	315-7	L2	Given a strand of mutated DNA, determine the mutation that occurred.
56	106	116-6	L1	Identify the methods of observing the fetus.
57	102	315-4	L3	Given a karyotype, identify a specific genetic syndrome.
58	104	317-4 315-8	L1	Recall the symptoms a specific genetic disorder.

59	104	116-6	L3	Identify which population would best be suited for genetic research based on a specific set of circumstances.
60	106	214-5	L3	Describe the method of inheritance in an unseen pedigree.
61	108	315-9	L2	Analyze gel electrophoresis samples to identify similar samples.
62	108	315-9	L2	Demonstrate an understanding of the processes involved to produce a DNA fingerprint.
63	110	118-2	L1	Identify an example of a genetically modified organism.
64	112	118-2	L2	Demonstrate knowledge of the steps involved in cloning.
65	Unit 4 118	115-7	L1	Describe the process of evolution.
66	120	114-5	L1	Identify the contributions of various scientists in the field of evolution.
67	122	114-2	L1	Recall the purpose of comparing homologous structures.
68	122	114-2	L2	Compare and categorize the structures of two organisms.
69	126	316-3	L2	Identify examples of founder effect given an unseen example.
70	124	212-1	L2	Calculate the age of a fossil using radioactive dating half-life.
71	126	316-3	L1	Identify examples of stabilizing, directional and disruptive selection.
72	124	212-1	L3	Calculate the percentage of individuals in Hardy – Weinberg equilibrium that has a particular trait.
73	128	316-3	L1	Recall how divergent evolution occurs.

74	128	316-3	L2	Identify an example of reproductive isolation, given an unseen set of circumstances.
75	130	316-4	L1	Recall characteristics about the various theories pertaining to the origin of life on Earth.

PART II: Constructed Response—Total Value: 25%

Item	Curriculum Guide Page	Outcome	Cognitive Level	Value	Outcome Description
76a	30	317-1	L2	2	Interpret a graph showing the potential difference between the inside and outside of a neuron.
76b(i)	44	317-1	L3	1	Given an elevation in a hormone level, describe the effects on the body systems.
76b(ii)	44	317-1	L3	2	Given an endocrine system disorder, provide two possible treatments.
77a	58	313-2	L3	2	Make connections regarding the processes involved in a cell division phase with how they affect the remainder of the cell cycle.
77b	34/62	11-3	L3	2	Make a connection between stem cells and the possible treatment of a neurological disease.
77c (i)	76	118-4	L2	1	Demonstrate an understanding of how a particular type of birth control works to prevent conception.
77c (ii)	76	118-4	L2	2	Provide advantages and disadvantages to a particular form of birth control.

78a(i)	88,94	212-4 315-1	L3	3	Identify and interpret inheritance patterns using a dihybrid cross.
78a(ii)	88,94	212-4 315-1	L3	2	Interpret the results of a dihybrid cross in order to determine the phenotypes of the parents.
78b(i)	108	315-9	L3	2	Describe/Interpret the processes involved in genetic engineering.
78b(ii)	112	118-6 118-2	L2	2	Identify the benefits/risks associated with genetic engineering.
79a	122	114-2	L3	2	Discuss the evolutionary relationships of two unseen species, given specific comparative categories.
79b	128	316-3	L2	2	Identify specific examples of prezygotic and postzygotic barriers.